

DOCUMENT RESUME

ED 174 398

SE 026 745

TITLE Environmental Education: Architecture's Role.
INSTITUTION American Inst. of Architects, Washington, D.C.
PUB DATE Oct 78
NOTE 24p.
AVAILABILITY FROM American Institute of Architects, 1735 New York Avenue, N.W., Washington, D.C. 20006 (free)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Architectural Character; Architectural Programing;
*Architecture; *Educational Legislation;
*Environmental Education; Private Agencies; *Public Policy; Science Education

ABSTRACT

This paper provides information to public officials, state legislators, and the general public regarding the Institute's policy and initiatives on the development of environmental education legislation or regulation. It supports state legislation to establish environmental education programs at all levels of public and private education. Included are discussions of the AIA policies on environmental education, the role of the architect in environmental concerns, a discussion of the Environmental Education Act of 1970, examples of state programs and legislation, and suggestions for establishing environmental education programs in response to implementation of proposed legislation and regulations.

(Author/RE)

* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *

THE AMERICAN
INSTITUTE OF
ARCHITECTS

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY.

"PERMISSION TO REPRODUCE THIS
MATERIAL HAS BEEN GRANTED BY

Thomas Bennett

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)."

ED174398

SE 026 745

ENVIRONMENTAL EDUCATION:
ARCHITECTURE'S ROLE

**ENVIRONMENTAL EDUCATION:
Architecture's Role**

**The American Institute of Architects
1735 New York Avenue, NW
Washington, D.C. 20006**

**May, 1978
Revised October, 1978**

CONTENTS

INTRODUCTION	1
EDUCATING FOR TOMORROW	3
ENVIRONMENTAL EDUCATION -- AN AIA CONCERN	5
THE 1970 ENVIRONMENTAL EDUCATION ACT	7
STATE LEGISLATION AND PROGRAMS	9
IMPLEMENTATION	13
Approaches	13
Resources	14
APPENDIX A. GOALS OF ENVIRONMENTAL EDUCATION FOR FLORIDA	17
APPENDIX B. IMPLEMENTATION: THE FLORIDA EXEMPLARY ENVIRONMENTAL EDUCATION (MINI-GRANT) PROGRAM	21

INTRODUCTION

This paper has been prepared by the American Institute of Architects to provide information to public officials, state legislators, and the general public regarding the Institute's policy and initiatives on the development of environmental education legislation/regulation. It supports state legislation to establish environmental education programs at all levels of public and private education. Included are discussions of the AIA policies on environmental education, the role of the architect in environmental concerns, a discussion of the 1970 Environmental Education Act, examples of state programs and legislation, and suggestions for establishing environmental education programs once legislation/regulation is implemented.

... the built environment is the physical framework for our activities and interactions. Comprised of the cities, streets, houses and parks built and landscaped by man and including the spaces that connect them, the built environment surrounds us all. It determines the shape of our lives.

Built environmental education, then, stresses the development, first, of an awareness of surroundings, senses, feelings, and needs; then, of an understanding of the functions and the impact of the environment; and finally, of the ability to use the environment and change it to best satisfy the needs that have been defined.¹

The issue of environmental education has begun to appear frequently in recent years -- in the press, in legislative and business discussions, and on the minds of citizens. Such interest and concern is not surprising, since it has been estimated that a person spends as much as 95 percent of his/her time today in the built, or person-made, environment. Only a comparatively small number of square miles of the United States are not shaped or altered by people. The built environment influences our health, our safety, and our behavior. It influences the distances we must travel for necessities, how we spend our leisure time, how easily our children learn, and how much space we have to live in. Almost every phase of our day-to-day life is touched by it.

Even with the growing interest in environmental studies, until recently the built environment unfortunately has not received educational emphasis. Often, educators have had a negative feeling about the built environment, as a force impinging upon and destroying the natural world. However, future decision-makers and future builders are becoming more and more aware of the necessity of molding the built environment into one which contributes to a better quality of life for those living in it.

Environmental education programs can result in a widespread public understanding of and demand for quality in the built environment. Aware citizens can make better choices. They require buildings designed to a human scale, streets designed for safety, furniture designed to fit the human body, classrooms designed for learning, parks that are restful, and public buildings that express the values of the community.

¹ From "Architects-in-Schools," a leaflet describing the program by the Architecture/Environmental Arts Program for Artists-in-Schools of the National Endowment for the Arts in cooperation with Education Futures, Inc.

ENVIRONMENTAL EDUCATION -- AN AIA CONCERN

The American Institute of Architects strongly supports legislation designed to promote a greater understanding of the environment through education. The Institute long supported and strongly encouraged the passage of the Environmental Education Act of 1970 (see page 7 for a more detailed explanation of the Act) and subsequently supported the reauthorization of the Act. The Institute continues to "believe that the solutions to environmental problems can only be achieved when all citizens are fully aware of the complexities and interrelationships of the man-made and natural environment." ²

According to a resolution approved by the 1970 AIA Convention, "If concern for the environment is to be more than a fad of the 1970's, we must equip the average citizen to make rational judgments on environmental matters. If public concern is to be translated into action, the public must become more astute."

In 1967, the AIA formed an environmental education committee which is now composed of 65 members. The committee is charged with developing AIA's role as a "catalyst" in bringing about the inclusion of built environmental education in local elementary and secondary schools. It works to support the federal government and national and regional teacher organizations in regard to state legislation advancing environmental education. It creates and recommends national AIA policies in these areas of concern, and works toward creating in these sectors of the general public an awareness of the environment (both natural and built) and the architects' role in solving environmental problems.

The architect, as the principal molder of the built environment, is naturally involved in the process of achieving and preserving quality in the built environment. What we build, why we build, and where we build are all part of his/her responsibility. Architects, both individually and collectively, have become activists deeply involved in environmental education.

The success of built environment education programs can be greatly enhanced by the participation of architects or design professionals. Their awareness of space and structures, and their mastery of the design process, can be invaluable. A new role is being created for architects as they are called

upon more and more frequently to explain the impact of the environment on our lives and to pass along the ability to use and change the environment. Architects, architectural educators, and architectural students are visiting elementary and secondary schools, working with students and teachers in workshops and projects, speaking before public groups, leading urban tours, preparing environmental awareness packages, and working in many other creative ways toward this important objective.

The importance of bringing built environment education into the schools was recognized by the National Endowment for the Arts, whose new Architects-in-Schools program, a nationwide cooperation of students, teachers, and designers, placed architects, landscape architects, planners, and designers in school residencies in 22 states during its first year (1976).

These resource people, working in elementary and secondary schools throughout the country, involved students, teachers, and interested community members in analyzing their surroundings and participating in the design process. They helped students and teachers develop an awareness of the built environment and its relationship with the natural environment, deepened their understanding of the impact of the built environment on their lives, and encouraged their participation in the shaping of their own environment. The program teaches through lectures and presentations, field trips, walks and tours, model building, mapping, drawing and writing. The architects in the program may widen their effectiveness by conducting community workshops or working with the community on preservation projects. Students have proven the interdisciplinary application of environmental education. In one school, several classes have been involved in the building of a geodesic greenhouse -- the geometry class was introduced to geodesics and designed the structure, shop classes participated in construction, and biology classes developed the organization and managed the greenhouse.

² From a letter to The Honorable John Brademas, Chairman, Select Education Subcommittee, Committee on Education and Labor, U.S. House of Representatives, from S. Scott Ferebee, Jr., FAIA, President, The American Institute of Architects, on April 26, 1973.

THE 1970 ENVIRONMENTAL EDUCATION ACT

Legislation at the federal level has set a valuable precedent for states to follow. In 1970, Congress passed an Environmental Education Act, whose purpose was "to encourage and support the development of new and improved curricula to encourage understanding of policies, and support of activities designed to enhance environmental quality and maintain ecological balance..." Its conclusion was that adequate resources did not exist for educating and informing citizens in the area of environmental concerns, and that concerted efforts in educating citizens about environmental quality and ecological balance were therefore necessary.

The Act authorizes a program of grants and contracts to support research, demonstration, and pilot projects designed to educate the public on the problems of environmental quality and ecological balance. Such projects support education dealing with people's relationship with both the natural and man-made surroundings, including the relation of population, pollution, resource allocation and depletion, conservation, transportation, technology, and urban and rural planning to the total human environment.

Applications for financial assistance may be submitted for one of two basic project categories:

1) General Projects - Under this category, financial assistance may be awarded for (a) projects to assist in the development of effective environmental education practices and materials, and (b) projects to assist utilization of effective environmental education practices and materials. Applicants may be institutions of higher education, state or local educational agencies, and other public and non-profit private agencies, organizations, and institutions including libraries and museums.

2) Mini-grant (Workshop) Projects - Under this category, grants in amounts not to exceed \$10,000 may be made for the conduct of workshops, seminars, symposiums, and conferences to help communities understand the causes, effects, issues and options surrounding a local environmental problem. Applicants may be any public or non-profit private organization.

The Act is administered by an Office of Environmental Education within HEW's Office of Education. In fiscal year 1977, 908 applications were received and 89 grants were awarded (approximately \$2.5 million). Projects funded during that year included:

- \$95,386 to the University of Alaska-Fairbanks for an elementary and secondary education program for small, rural schools in environmental education, including curricula development and staff preparation for the design and delivery of environmental education programs;
- \$10,000 to the University of Louisville Foundation, Inc., for Mini-grant workshops on population and urban environment;
- \$51,900 to Vision, Inc., Cambridge, Massachusetts, for resource material development on the built environment for grades 4-9;
- \$9,773 to Community Care, Inc., Columbia, South Carolina, for a Mini-grant workshop on human settlements from Midlands to Habitat;
- \$30,406 to the University of Puerto Rico for secondary school teacher personnel development.

STATE LEGISLATION AND PROGRAMS

But it is at the state level that environmental education legislation can be most effective. Several states have passed legislation which has important and far-reaching effects. In other states, resolutions have been drafted, or policies or regulations established.

In most cases, responsibility for the program rests within the state Department of Education; a strong interdisciplinary approach is taken; and environmental education is related to all levels of education and training. In some cases, the natural, as opposed to the built, environment is stressed, but a successful program focuses on both. Energy education is usually retained under the "umbrella" of environmental education, even though it is an important issue in itself. Typically, budgets have ranged from approximately \$40,000 to \$500,000 per year.

Following are descriptions of successful state legislation that has been implemented:

- In 1970, Florida was the first state to pass an environmental education act. A Master Plan and Action Guide for Environmental Education (see Appendix for excerpts, page 17) was formulated. Responsibility for the program was placed with a newly formed Bureau of Environmental Education within the state Division of Elementary and Secondary Education. A curriculum development plan spanned grades K-12, and included a comprehensive pre-service and in-service training program for teachers. The program employed an interdisciplinary approach linking the subject areas most closely related.

Implementation began with a state Exemplary Environmental Education (Mini-grant) Program. Its concept was to apply seed money to ideas, people, and programs that would enable them to take first steps in implementing an environmental education program or activity in their school or county that would serve as a model. The excellent response to these grants substantiated the idea that there was a critical need for outside school district supplemental funding for environmental education. Following are examples of Mini-grants for 1977-78:

- In Citrus, a teacher training workshop will train teachers to integrate energy efficiency information into classes in all subjects at all levels.

- In Columbia County, a model primary school greenhouse will be designed and constructed at the Columbia Co. Kindergarten Center.

- In Jackson, an outdoor learning center will be completed which features an outdoor classroom, and includes identification signs, feeders and trash receptacles.

- Minnesota is an example of cooperation between federal and state environmental education programs. In Minnesota, environmental education legislation was made possible by a \$40,000 planning grant from the federal Office of Education which funded a two-year planning study. After that time, state legislation was passed which set up a unique sharing of responsibilities by various agencies and departments. The Minnesota Environmental Education Council established by a bill in 1971 must spend at least 50 percent of its time and money in cooperation with other agencies, i.e., the state Department of Education (which deals exclusively with K-12 educational programs), Natural Resources, Pollution Control, and Energy. Another unique feature of the Minnesota program is their regionalized approach -- 13 regional development commissions have a great deal of autonomy under their system.

It should be noted that since both federal and state environmental education acts and programs exist, some degree of cooperation between the two levels may be beneficial. Since the 1970 federal Environmental Education Act permits direct grants to any non-profit organization, HEW can work through states or localities -- e.g., making grants to state departments of education, local school systems, citizen groups. For example, a \$40,000, two-year planning grant to the state of Minnesota resulted in state legislation for environmental education. However, the level of funding allotted to HEW for environmental education programs may limit the degree of such federal help available.

Thousands of good local programs of environmental education have been established -- apart from any legislative or administrative action -- and their value should certainly not be overlooked. Producers and advocates of such programs have included museum personnel, teachers, after-school enrichment instructors, conservation and preservation groups, and design personnel. Much can be learned from these programs, but they often cannot proceed or expand because of lack of funding and, in many instances, the efforts have been fragmented and duplicated. A coordination of endeavors among the many groups involved through state action would make the wisest use of their efforts.

IMPLEMENTATION

Environmental education is not an entirely new class for teachers to add to their curriculum. Instead, it is a fresh way to approach, consider, and apply what is already being taught in the classroom. It is an interdisciplinary study, with built environment emphasis woven through existing classes. It can be relevant to science classes, biology classes, math classes, English classes, and art classes.

Approaches

There are three general approaches to environmental education:

1) The observing, thinking, and discovery approach. This approach includes looking at the environment, asking pointed questions about it, and speculating. Questions may include: "What made you notice this building?" "What can you tell about it by looking?" "How old would you guess it is?" "What is its function?" At first, almost all classwork will probably revolve around observation, using any medium available (films, photographs, interviews, maps, written reports).

2) The theoretical problem approach. This approach builds programs around a theoretical situation -- making decisions around a school, neighborhood, or new town. Direction is given to observational activities and serves as a strong motivator. Different values, personal goals and objectives affect a definition of "desirable environment."

3) The "real world" situation approach. Sooner or later an approach may be made that deals with actual choices which confront the community. A class program may deal with a real problem, such as the fate of a community park, a downtown slum, or how zoning affects the school.

Any continued emphasis on environmental education in the classroom will probably combine all three of these approaches.

Activities which have proven successful include:

- Changing the classroom environment by designing school furniture for human proportions. Measure body parts for class members and then measure furniture and fixtures.
- Mapping the "people movement pattern" inside and around the school, recording frequency, who the users are, and identifying problems.
- Using a history lesson to study environmental education by studying local projects built under WPA, HUD and Model Cities programs. Design a works program based on an analysis of the community's present needs.

Resources

An ever-growing number of resources -- books, games and multi-media kits and films -- are available. But environmental education also relies on learning by experiencing, and resources exist everywhere -- in the classroom, the school and its neighborhood, newspapers, magazines, histories and guidebooks to the community, maps, and the people working and living in the community.

Workshops have been set up successfully to alert teachers to the importance of environmental education and to provide them with workable methods for incorporating such an issue into their curriculum easily. The AIA publication, "Built Environment Guidebook: How to Conduct Environmental Education Workshops" documents and evaluates five environmental education workshops that were held for teachers and architects jointly by the AIA and the Built Environmental Education Center (contact Dr. Aase Eriksen, Educational Futures, Inc., 2118 Spruce Street, Philadelphia, Pennsylvania 19103).

There are several resource centers and information sources. The AIA, its national environmental education committee, and its local components, are a ready source of information and help. A series of three AIA documents has been prepared to help communities in implementing new environmental education programs: "Built Environment Guidebook: How to Conduct Environmental Education Workshops," "Built Environment; A Teacher Introduction to Environmental Education," and "Built Environment; Environmental Education Teaching Tools." For copies, write or call the Director of Environmental Education Programs, The American Institute of Architects, 1735 New York Avenue, N.W., Washington, D.C. 20006, telephone (202) 785-7300.

For suggested environmental education legislation or programs, contact the local AIA chapter in your area or the Director, State Component Affairs, The American Institute of Architects, 1735 New York Avenue, NW, Washington D.C. 20006 (202) 785-7385.

APPENDIX A. GOALS OF ENVIRONMENTAL EDUCATION FOR FLORIDA

To develop an environmental education program for Florida, the following goals and procedures have been outlined:

Goals

To provide optimum conditions for the development of a citizenry which:

- Recognizes the earth's biosphere as its environment.

- Recognizes mankind as a part of a system made up of people, culture and man's physical and natural surroundings.

- Appreciates its environment as a living life support system.

- Accepts the responsibility for the present condition of its environment.

- Appreciates man's ability to control, use, preserve, and destroy his environment.

- Responds to economic and political forces, social pressures and cultural value systems with sound constructive environmental decisions.

Objectives

Some objectives of a suggested state environmental education program are to use the resources of the Florida school systems, the relevant state agencies, and the concerned private organizations to provide experiences inside the classroom and at available outdoor teaching areas to produce students who:

- Perceive the natural world as a complex system.

- Understand that if the natural world is to function properly, then all of its parts must function properly.

- Conceive of the natural world as an ecosystem or life support system with many living parts.

Recognize that diversity is necessary if the ecosystem is to function properly.

Appreciate the fact that all materials in nature which can be recycled must be and used over and over again. Materials now considered wastes must be reused if future generations are to have the necessities of life.

Recognize that man is adapted to live in the natural world. Inherited traits make man totally dependent on an essentially natural world.

Think of man as a biological organism with the same basic needs as almost all other living creatures.

Comprehend man's dependence on the biological organisms which make up the living life support system of the earth for his own health and happiness.

Use resources with the attitude that man can damage and ultimately destroy the environment which sustains his own life.

Recognize that man's morality demands the right for any species of living creatures to exist in a suitable habitat.

Understand that urban man's production of art, literature, music and recreational programs is sufficient evidence of the therapeutic effects of natural environments.

Perceive that a sense of awe, wonder and appreciation of his natural surroundings is an essential part of most of man's theological guidelines.

General Procedures

In preparing a state plan for environmental education, the three critical elements of an environmental management program are used as guidelines:

- **Element I - Inventory Present Resources**

Conduct survey(s) of counties to establish scope and content of existing efforts in environmental education. Use questionnaire(s), letters, consultants.

Conduct survey(s) of teacher training courses presently geared to environmental education. Consult with state universities.

Appoint liaison in each county. Select interested individuals who have experience in environmental education and have the capacity for program development.

Hold conferences for persons presently operating environmental education projects. Request suggestions as to how state consultant can be of most assistance to local programs. Seek local contributions to state program. Begin development of specific objectives.

Publish a newsletter. Schedule printing as needed.

- **Element II - Prepare Wise Management Policies**

Prepare goals and objectives for environmental education. Complete goals and objectives by January. Refine these at conferences in January, February and March; have available for trial use with feedback by April.

Establish regional in-service teacher training programs. (1) Prepare suggested syllabus and narrative descriptions of courses to be offered by universities during the summer through the facilities of Continuing Education; (2) Disseminate information regarding courses to be offered as part of the regular program at the various Florida universities by fall.

Distribute introductory materials which also contain specific suggestions for teaching about the environment. (1) Provide copies of pertinent, selected articles, pamphlets, etc. to supervisors, department chairmen, classroom teachers; e.g., "Pollution Problems and Mathematical Exercises," "Teaching the Environment in Context," "Structuring an Environmental Education Program." (2) Develop color slide program using an outdoor area in environmental education, for use by universities and county supervisors. (3) Publish an annotated bibliography of free environmental education materials available from state agencies in the spring of 1972. (4) Prepare curriculum guide, K-6, and have available for field testing by September, 1973. Hold curriculum conference in summer, 1973, for completion of this guide. (5) Publish teacher guide to environmental education by 1974. Hold curriculum conference in summer, 1974, for development of this guide.

Stimulate university interest in developing an adequate teacher education program in environmental education. (1) Complete comprehensive draft of proposed courses. (2) Review courses, summer conference, 1973.

Prepare model in-service workshop which can be incorporated into district master plans. Develop workshop plan through cooperative effort with districts.

Provide environmental education resource materials, information, and an outdoor environmental education facility to service four districts. Establish four offices, each having an audio-visual facility and an outdoor teaching area, to serve designated regions. Each center would have one full-time environmental specialist to assist counties in the region.

● **Element III - Promote Public Cooperation**

Coordinate development of non-credit, public service courses. Assist established organizations such as the Audubon Society, Issac (sic) Walton League, etc. and counties in presenting courses designed to heighten awareness of environmental problems.

Conduct an extensive public speaking campaign. Accept invitations for the consultant and appropriate representatives to speak throughout the state.

APPENDIX B. IMPLEMENTATION: THE FLORIDA EXEMPLARY ENVIRONMENTAL EDUCATION (MINI-GRANT) PROGRAM

The concept of the state mini-grant program is to apply seed money to ideas, people, and programs that will enable them to take the first steps in implementing an environmental education program or activity in their school or county that will serve as a county or state model.

In reviewing grants priority consideration is given to:

- 1) interdisciplinary environmental education applications.
- 2) programs addressing urban environmental education materials, activities, and teacher training.
- 3) projects that would clearly serve as district or state environmental education models.
- 4) direct active involvement of students, teachers, and community members in the environmental education project.
- 5) projects where alternative funding sources were not reasonably available.
- 6) individual school proposal submissions.

In addition, a rating scale is used to evaluate each project proposal with at least three reviewers rating and critiquing each proposal. The major consideration on the rating scale form are:

- 1) What impact will the proposal have on environmental education in Florida?
- 2) What impact will this proposal have on environmental education in this school or district?
- 3) Are the objectives clearly defined and is the budget justified in light of the objectives?

-
- 4) Can the evaluation plan measure the objectives?
 - 5) What level of funding is recommended?

The excellent response to the environmental education mini-grant program for the 1973-74 submission substantiates the concept that there is a critical need in the State of Florida for outside school district supplemental funding for environmental education. In reviewing the 1973 mini-grant proposals it was significant to note three basic categories of grant requests.

First, in districts where no formal environmental education program exists, there were a large number of mini-grant requests to bring curriculum writing teams together for in-service training, or to develop a scope and sequence program for the district.

Secondly, proposals from districts with existing programs focused on specific critical needs that could not be funded from district sources. Examples are the Leon and Lee County proposals to develop effective teaching programs on school campuses. Other examples are the interdisciplinary study of the Miami River basin by teachers and students in Dade County and Escambia County's development of interdisciplinary field studies.

The third category of grants were submitted by individual teachers and schools. This type of proposal was a primary focus of the mini-grant program. Many teachers and schools submitted proposals to develop outdoor classrooms, special environmental programs for kindergartens, teachers writing curriculum materials for their classes and helping students teach other students.

The environmental education mini-grants will provide a two phase criteria and funding program.

Phase I consists of grants available for district mini-grant programs to fund innovative environmental education activities. The \$5,000 maximum per district should still prevail.

Phase II consists of a category for teacher or individual school initiated proposals that would be funded on merit. The maximum for any single proposal should be \$2,000. This would be in addition to any district proposal.

The rationale for the apportionment of Phase I and II funds is based on the review of district, individual school, and teacher mini-grants submitted in the 1973-74 year.

The mini-grant program provides funds directly to the classroom. In most districts it is the only source of funding directed at the legislatively mandated area of critical need -- ENVIRONMENTAL EDUCATION.